

CLAIMS:

1. A method for influencing, in a region of action, magnetic particles that have been introduced into an object, which method has the following steps:

- a) detection of interfering material in or on the object,
- b) generation of a magnetic field having a pattern in space of its magnetic field strength such that a first sub-zone (301) having a low magnetic field strength and a second sub-zone (302) having a higher magnetic field strength are formed in the region of action,
- c) changing the position in space of the two sub-zones in the region of action so that the magnetization of the particles changes locally,
- d) if required, acquiring signals that depend on the magnetization in the region of action, which magnetization is influenced by the above change in position.

2. A method as claimed in claim 1, wherein, before the introduction of the magnetic particles into the object, the detection of the interfering material is performed by measuring the change in the inductance of an inductive means that is the result of a change in the distance between the object and the inductive means.

3. A method as claimed in claim 2, wherein the inductive means is one of those means that are used in the generation of the magnetic field, in the change in the position in space of the sub-zones and, where applicable, in the acquisition of the signals.

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4. A method as claimed in claim 1, wherein, for the detection, steps b) to d) are performed for a first time with a lower spatial resolution and/or at a lower speed, and the signals acquired are analyzed to obtain information at least on the presence of interfering material.

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5. A method as claimed in claim 4, wherein the magnetic particles are not introduced into the object until after the detection.

6. A method as claimed in claim 4, wherein the magnetic particles are introduced into the object before the detection and wherein, in the analysis, the signals acquired are examined for signal components that derive from interfering material.

5 7. A method as claimed in claim 6, wherein interfering material is detected from the spectral composition of the signals acquired.

10 8. A method as claimed in any of the foregoing claims, wherein, if interfering material is present, magnetic fields having a reduced temporal variation are used during the influencing of the magnetic particles to change the position in space of the two sub-zones.

15 9. A method as claimed in any of the foregoing claims, wherein, if interfering material is present, steps b) and c) are performed with a reduced spatial resolution during the influencing of the magnetic particles.

10. An arrangement for influencing magnetic particles in a region of action, which arrangement has:

a) means for detecting interfering material,
b) means for generating a magnetic field having a pattern in space of its magnetic

20 field strength such that a first sub-zone (301) having a low magnetic field strength and a second sub-zone (302) having a higher magnetic field strength are formed in the region of action,

c) means for changing the position in space of the two sub-zones in the region of action,

25 d) if required, means for acquiring signals, which signals depend on the magnetization in the region of action that is influenced by the change in the position in space of the sub-zones.

11. An arrangement as claimed in claim 10 having a measuring means for measuring the inductance of at least one of the inductive means that are used for the generation of the magnetic field, for the change in the position in space of the sub-zones and/or for the acquisition of the signals.

12. An arrangement as claimed in claim 10 having an analyzing unit to obtain information on at least the presence of interfering material.

13. An arrangement as claimed in claim 12, wherein the analyzing unit is intended
5 to examine the signals acquired for signal components deriving from magnetic particles and also from interfering material.